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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,236	12/09/2003	Satyabrata Chakrabarti	LUC-285/Chakrabarti 5-6	4890

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01/25/2008

EXAMINER
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MAGLO, EMMANUEL K

ART UNIT	PAPER NUMBER
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2619

MAIL DATE	DELIVERY MODE
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01/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/731,236

Applicant(s)

CHAKRABARTI ET AL.

Examiner

Emmanuel Maglo

Art Unit

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-16, 19-21, 29-34, 36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-16, 19-21, 29-34, 36 and 37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

***Response to Arguments***

Applicant's arguments with respect to claims 1 and 29 have been considered but are moot in view of the new ground(s) of rejection necessitated by Applicant's amendment to claims 11, 12, 19-21, 31, and 36-37.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-16, 19-21, 29-34, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mustajärvi et al. (US 6,512,756 B1) hereinafter referred to as Mustajärvi in view of Maupin (US 6,600,917 B1) hereinafter referred to as Maupin.

Consider claim 11, Mustajärvi discloses one computer representing a *single board computer for providing general packet radio services functionality of a serving GPRS support node and gateway GPRS support node which is required for each call being serviced*, (the internal signaling and the call processing functionalities respectively of the GGSN and the SGSN can be integrated into the same physical node, (Col 7 lines 66 and 67) and further by providing all GPRS features in one computer, (Col 8 lines 14 and 16).

Mustajärvi teaches the claimed invention except a *line card processor for providing general packet radio services functionality of a serving GPRS support node and a gateway GPRS support node which is required for each packet being serviced and an internal bus for providing communications between the single board computer and the line card processor*. Maupin, in the same field of endeavor, teaches a computer platform 44, (a processor), with operationally connected bus 102 as showed in Fig. 2, to participate in the telecommunications system of Fig, for providing general packet radio services functionality of a serving GPRS support node and a gateway GPRS support node which is required for each packet being serviced . It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the platform as taught by Maupin to implement the single board computer to minimize the processing delay.

Consider claim 12, and as applied to claim 11 above, Mustajärvi discloses the general packet radio services support node wherein the general packet radio services

support node functions as a serving general packet radio services support node, as in (Fig. 1) where the GPRS support node SGSN is a node which serves the MS, (Col 7 lines 21-29).

Consider claim 13, Mustajärvi discloses the general packet radio services support node wherein *the single board computer supports radio resource management*, (Col 7 lines 22-27, each support node SGSN controls a packet data service within the area of one or more cells in a cellular packet radio network, and therefore, each support node SGSN is connected (Gb interface) to a certain local element of the GSM system. Further, Maupin teaches *authentication and mobility management for the serving general packet radio service support node*, (Col. 7 lines 50-57).

Consider claim 14, Mustajärvi discloses general packet radio services support node wherein the radio resource management comprises all cell selection management by, (Col 7 lines 47-50), transmitting location information or receiving a request for paging a GPRS subscriber, via one or several base stations i.e. cells. Accordingly the mobile station MS located in a cell communicates with a base station BTS over a radio interface and further with the support node SGSN to the service area of which the cell belongs through the mobile communication network.

Consider claim 15, Mustajärvi discloses the general packet radio services support node wherein the radio resource management comprises call path management as a logical link between the MS and the is created when a user attaches

to a GPRS network. The path created between the MS and the SGSN, and temporary indicated with the TLLI identifier is managed by the SGSN in connection with the establishment of the link, (Col 2 lines 56-65).

Consider claim 16, and as applied to claim 13 above, Mustajärvi discloses the general packet radio services support node wherein the radio resource management comprises  $U_m$  interface management, see Fig.1.

Consider claim 19, Mustajärvi discloses the general packet radio services support wherein the mobility management comprises line management, (Col 7 lines 54-57), for the SGSN creates, in connection with a PDP activation procedure, a PDP context (packet data protocol) which is used for routing purposes within the GPRS network with the GGSN which the GPRS subscriber uses.

Consider claim 20, Mustajärvi discloses the general packet radio services support wherein the mobility management comprises logical link establishment, maintenance and release; (see abstract) for a logical link established between a mobile station (MS) and a serving packet radio support node (SGSN), maintained temporary as a Temporary Logical Link Identity, TLLI, for update of the routing area.

Consider claim 21, Mustajärvi discloses the general packet radio services support node wherein the single board computer supports an encryption function, *wherein the line card processor supports one or more of routing and tunneling functions*, (Col 7 lines 62-66), *an encryption function, and a compression function*, (Col 2 line 14), *for the serving general packet radio service support node, wherein the line card processor supports one or more of address translation functionality, access control*

*functionality, and routing and tunneling functions for the gateway general packet radio services support node, (Col 7 lines 62-66).*

Consider claims 29, Mustajärvi teaches *supporting general packet radio services functionality* in packet radio networks and a method for using the apparatus of claim 11 in that a single board computer provides general packet radio services functionality, which is required for each call being serviced, represented by SGSN is *the first computing device* and a line card processor for providing general packet radio services functionality, GGSN, which is required for each packet being serviced is *the second computing device*.

Consider claim 30, the first computing device is a single board computer as discussed above in claim 11

Consider claim 31, *the second computing device is a line card processor* as discussed above in claim 11.

Consider claim 32, and as applied to claim 29 above, *wherein the step of providing a general packet radio services support node comprises the step of*

*providing the general packet radio services support node which functions as a serving general packet radio services support node wherein the step of providing a general packet radio services support node comprises the step of providing the general packet radio services support node which functions as a general packet radio services support node, (Col 7 lines 21-29).*

Consider claim 33, *the step of supporting general packet radio services functionality which is required for each call being serviced comprises the step of supporting radio resource management by the first computing device*, (Col 7 lines 22-27), each support node SGSN controls a packet data service within the area of one or more cells in a cellular packet radio network, and therefore, each support node SGSN is connected (Gb interface) to a certain local element of the GSM system.

Consider claim 34, *the step of supporting general packet radio services functionality which is required for each packet being serviced comprises the step of supporting at least one encryption, compression, routing and tunneling functions by the second computing device*, for the single board computer supports an encryption function, (Col 2 lines 5-9), the L3MM protocol supports the functionality of mobility management, e.g. GPRS Attach, GPRS Detach, security, routing update, location update, activation of a PDP context, and deactivation of a PDP context, as well as a compression function, (Col 2 lines 10-14), Subnetwork Dependent Convergence Protocol (SNDCCP) supports transmission of protocol data units (N-PDU) of a network layer between an MS and an SGSN. The SNDCCP layer, for example, manages ciphering and compression of N-PDUs. More so, the second computing device supports routing and tunneling functions for, (Col 7 lines 58-70), the GPRS gateway support node GGSN connects an operator's GPRS network to other operators' GPRS systems and to data networks 11-12, such as an inter-operator backbone network, IP network (Internet) or X.25 network. The GGSN includes GPRS subscribers' PDP addresses and routing information, i.e. SGSN addresses. Routing information is used for tunneling protocol



data units PDU from data network 11 to the current switching point of the MS, i.e. to the serving SGSN. Functionalities of the SGSN and GGSN can be integrated into the same physical node.

Consider claim 36, the step of supporting general packet radio services functionality which is required for each call being serviced comprises the step of supporting session management by the second computing device. The line card processor, the second computing device, provides general packet radio services session management support functionality via GGSN (Fig. 1), and by containing the GPRS subscriber's PDP addresses and routing information, tunnels the PDU for the current switching point. In so doing the home location address register HLR maps each PPD type and PPD address into one or more GGSNs, (Col 8 lines 3-7).

Consider claim 37, *the step of supporting general packet radio services functionality which is required for each packet being serviced comprises the step of supporting at least one of address translation, access control, routing and tunneling functionality by the second computing device.* The line card processor, the second computing device, provides general packet radio services session management support functionality via GGSN and by containing the GPRS subscriber's PDP addresses and routing information, tunnels the PDU for the current switching point. In so doing the home location address register HLR maps each PPD type and PPD address into one or more GGSNs, (Col 8 lines 3-7), the GPRS gateway support node GGSN connects an operator's GPRS network to other operators' GPRS systems and to data networks 11-

12, such as an inter-operator backbone network, IP network (Internet) or X.25 network. The GGSN includes GPRS subscribers' PDP addresses and routing information, i.e. SGSN addresses. Routing information is used for tunneling protocol data units PDU from data network 11 to the current switching point of the MS, i.e. to the serving SGSN.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Maglo whose telephone number is (571)270-1854. The examiner can normally be reached on Monday - Friday 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EM

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January 22, 2008

  
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